

Curtain Controller Sprocket and Chain Drive

Featuring the Header Sprocket System

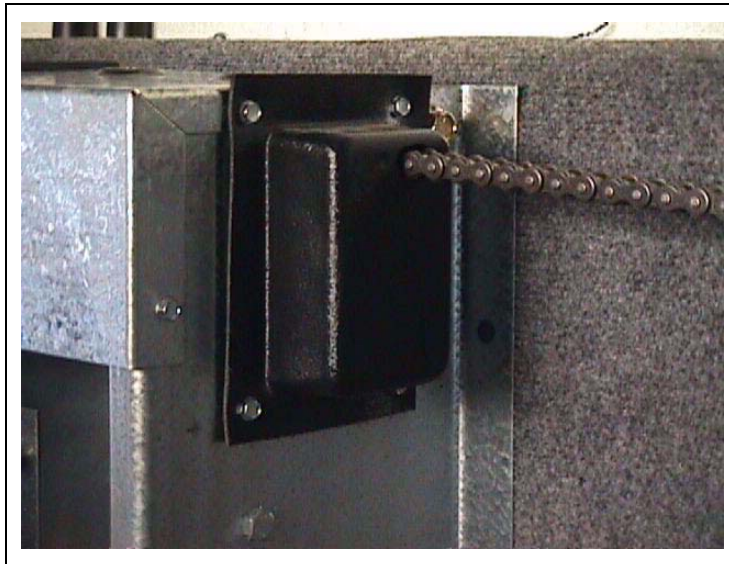
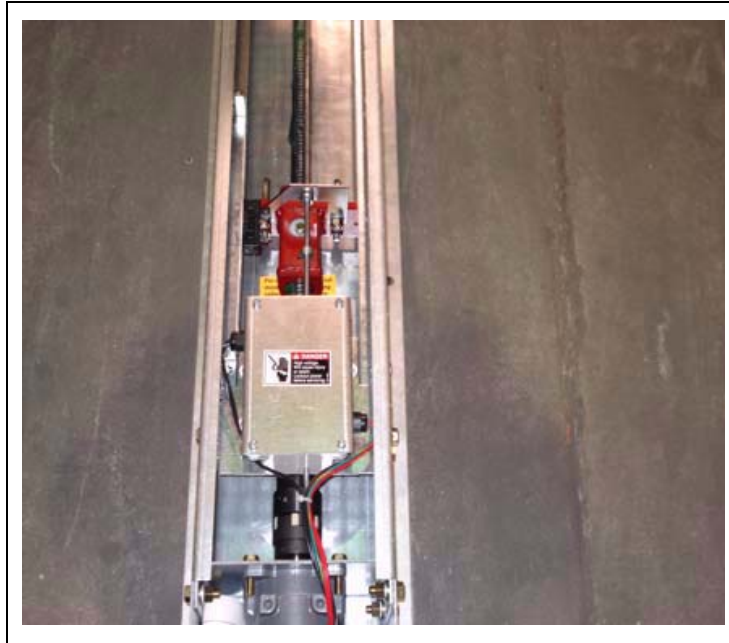
Operation and Installation Manual

PNEG-881

Date: 03-09-09



PNEG-881



This equipment shall be installed in accordance with the current installation codes and applicable regulations which should be carefully followed in all cases. Authorities having jurisdiction should be consulted before installation occurs.

Contents

Chapter 1 Safety	4
Safety Guidelines	4
General Safety Statement	5
Chapter 2 Decals	7
Chapter 3 Installation	9
Chapter 4 Header Sprocket/Pulley	12
Header Sprocket or Pulley Configurations	12
Chapter 5 Sprocket/Pulley Cover Mounting	13
Sprocket/Pulley Cover Mounting Instructions	13
Chapter 6 Maintenance	14
Chapter 7 Troubleshooting Guide	15
Chapter 8 Parts List	17
Enclosed Limit Switch Assembly (SPRKT2430 and SPRKT2460 Only)	17
Enclosed Limit Switch Assembly (All Other Sprocket Machines)	18
Curtain Machine Components	20
Chapter 9 Installation Kit	24
AC180-A Installation Kit (Purchased Separately)	24
AC180-B Installation Kit (Purchased Separately)	25
Chapter 10 Wall Mount	27
Outside Endwall Mount for Curtains	27
Outside Sidewall Mount for Curtains (Vertical Installation)	28
Inside Endwall Mount for Curtains	29
Inside Sidewall Mount for Vent Doors (Vertical Installation)	29
Inside Endwall Mount for Vent Doors (Vertical Installation)	30
Inside Sidewall Mount for Vent Doors (Horizontal Installation)	30
Chapter 11 Wiring Diagrams	31
Wiring Diagram for 110V 60 Hz	31
Wiring Diagram for 220V 50/60 Hz	32
Chapter 12 Warranty	33

Safety Guidelines

This manual contains information that is important for you, the owner/operator, to know and understand. This information relates to protecting **personal safety** and **preventing equipment problems**. It is the responsibility of the owner/operator to inform anyone operating or working in the area of this equipment of these safety guidelines. To help you recognize this information, we use the symbols that are defined below. Please read the manual and pay attention to these sections. Failure to read this manual and its safety instructions is a misuse of the equipment and may lead to serious injury or death.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.



DANGER indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.



WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.



CAUTION used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.



NOTE indicates information about the equipment that you should pay special attention.

General Safety Statement

Our foremost concern is your safety and the safety of others associated with grain handling equipment. This manual is to help you understand safe operating procedures and some problems which may be encountered by the operator and other personnel.

As owner and/or operator, you are responsible to know what requirements, hazards and precautions exist and inform all personnel associated with the equipment or in the area. Safety precautions may be required from the personnel. Avoid any alterations to the equipment, which may produce a very dangerous situation, where SERIOUS INJURY or DEATH may occur.

Electrical Safety

An adequate and safe power supply to the Curtain Controller unit is essential for safety. A competent and qualified electrician must undertake all electrical wiring. All wiring is to be installed according to the National Standards and Regulations relevant to your Country and Region.

Electrical safety devices, emergency stop and main isolators are provided with the Curtain Controller System and are essential for safety. This should be installed as indicated in the enclosed installation instructions and in accordance with the relevant codes and directives.

User's Manual

This manual contains information and instructions essential to the safe installation and use of the Curtain Controller System. Read this manual thoroughly **before** attempting any installation or use of the Curtain Controller System. Keep this manual with the Curtain Controller System or in a location where it can be readily accessed. Failure to read this manual and its safety instructions is a misuse of the equipment.

Correct Uses of Your Curtain Controller

The Curtain Controller System is designed solely for the purpose of controlling vent doors in livestock (swine and chicken) houses. Use of the system in any other way is a misuse of the system and may endanger safety and health.

Only genuine AP/Cumberland parts are to be used in the installation and use of the Curtain Controller System. Use of other non-genuine parts is a misuse of the system and may lead to dangerous situations imperilling the safety and health of you and others.

Controls

The Curtain Controller is designed for use with manual or automatic temperature control. GSI recommends the use of genuine GSI controls. Use of any controllers that do not meet this specification can pose a risk to health and safety and will lead to malfunction and failure of the Curtain Controller.

This machine is not designed for use in atmospheres where there is a risk of explosion. Use of the Curtain Controller System in such an environment is prohibited. If in doubt, contact your dealer or GSI.

Safety Guards

The Curtain Controller System contains many moving and electrical parts, which will cause serious injury or death if touched. Guards are placed on the machine for your protection. Operating the machine at any time with guards removed or incorrectly fitted is a serious misuse of the machine and endangers safety.

Safety in Handling the Curtain Controller System

The Curtain Controller weights:

Model #	Weight
SPRKT2415	104 lbs/47 kg
SPRKT2430	
SPRKT2460	
SPRKT3615	119 lbs/54 kg
SPRKT3630	
SPRKT3660	
SPRKT4815	135 lbs/61 kg
SPRKT4830	
SPRKT4860	
SPRKT6015	151 lbs/69 kg
SPRKT6030	
SPRKT6060	

All precautions should be taken when lifting and/or moving the unit, to prevent the risk of physical injury.

Maximum Load

The Curtain Controllers with 15 RPM and 30 RPM gear motors can lift a maximum of 4000 lbs/1814 kg at a 1:2 pulley ratio. 60 RPM Gear motors can lift a maximum of 1000 lbs/453 kg at a 1:2 pulley ratio.

Safety in Maintenance

While the Curtain Controller is designed to keep maintenance to a minimum, some maintenance will be necessary in the course of the life of the machine. Do not attempt any repairs on the machine unless you are competent to do so. Remember that the Curtain Controller may operate under automatic control and start without warning. Never attempt any work on the Curtain Controller without first isolating the machine from the main power and locking the isolator so that only you can turn the power back ON.

Follow all guidelines given in the maintenance section of this manual.

Before restarting the Curtain Controller, ensure that all electrical enclosures are locked closed and all guards and other safety measures are correctly fitted.

If in any doubt, contact your dealer or GSI for assistance.

Noise

Tests on this machine indicate noise levels at a position one (1) meter from the drive unit, and 1.6 meters above the ground do not exceed 70 dBa, continuous "A" weighted sound pressure or 63 Pa, instantaneous "C" weighted sound pressure.

Safety Decals and Warnings

The following pages show you exactly where the safety signs and warnings (decals) should be placed on your Curtain Controller. If a decal is missing, damaged or unreadable, please contact your dealer or the GSI group, for a free replacement.

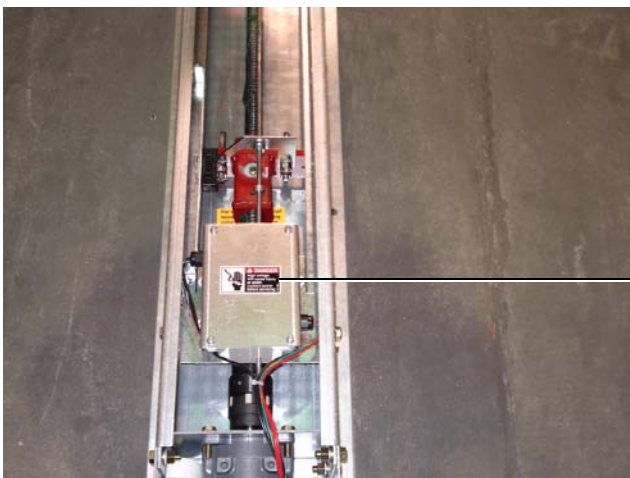
For guidance or assistance on any issues relating to the safe use of the Curtain Controller System,

Contact:

GSI Group
 1004 E. Illinois St.
 Assumption, IL. 62510
 Phone: 217-226-4421
 Fax: 217-226-4420



Decal-889 is located above the electrical box on the outside of the Curtain Controller.



DC-889 is located on the electrical unit within the Curtain Controller.





DC-1516 is located on the front cover of the Curtain Controller.

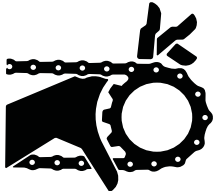
CAUTION

Automatic equipment.
May start at any time.
Lockout power before servicing.

DC-1516



DC-856 is located on the sides of the Curtain Controller underneath the sprocket covers.



WARNING

Moving parts can crush and cut.
Keep hands clear of sprocket and chain.

DC-856



DC-1517 is located underneath the sprocket covers above the warning decal (DC-856) on the Curtain Controller.



DANGER

Moving parts can crush and cut. Keep hands clear of sprocket and chain.

DC-1517

This manual outlines the recommended sequence for the installation of the Curtain Controller System. Following the sequence will prove the safest and easiest method of installation. Above all, connection of the system to the electrical mains should be final stage of installation. Failure to observe this could lead to a fatal accident.

1. Unpack the Curtain Controller and remove the front cover. Inspect the machine for visible defects.
2. Select mounting configuration. (See examples of: Outside sidewall one (1) curtain, outside endwall two (2) curtains and inside endwall two (2) curtains on [Page 27-30](#).)
3. Screw one (1) 3/8" x 3" lag bolt 6-1/2" below the desired height of the Curtain Controller.
NOTE: Leave 1-1/2" between the bolt head and the wall. (See [Figure 3A](#).)

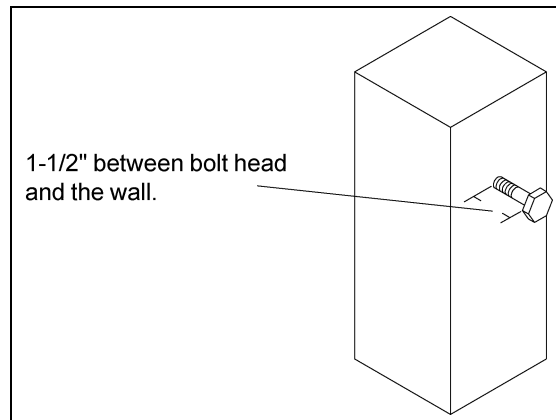


Figure 3A

4. Using the "keyhole" slot in the back of the Curtain Controller, hang the machine on the 3" lag bolt. (See [Figure 3B](#).) **NOTE:** The 3" lag bolt should only be used to hang the machine to the wall. Do not attempt to operate the machine until it is fully secured.

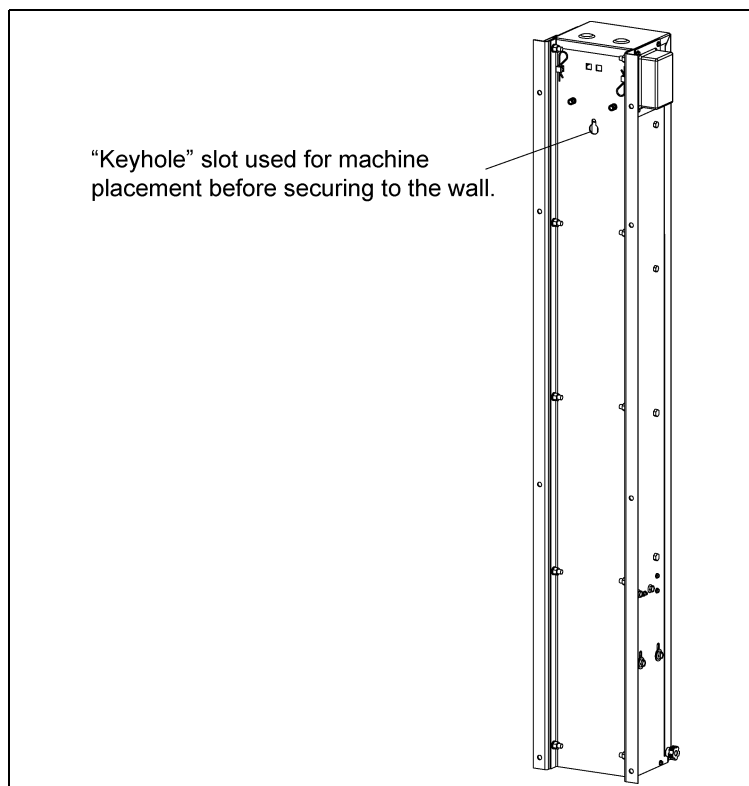


Figure 3B

3. Installation

5. Secure the machine to the wall by using the minimum six (6) 3/8" x 2" lag bolts provided. (See Figure 3C.)

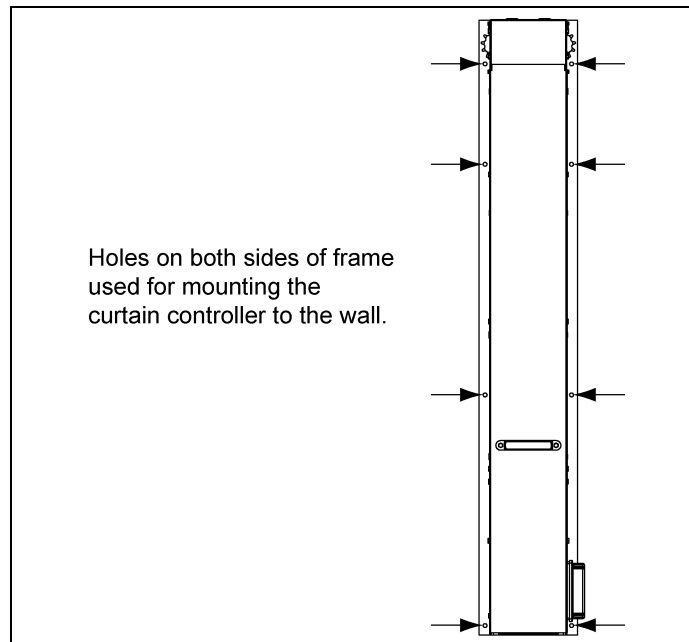


Figure 3C

6. Remove pulley/sprocket covers.
7. Insert the chain into the top of the machine onto the sprocket and pull down through the machine until the chain reaches the chain adapter. (See Figure 3D.)
8. Fasten the chain to the chain adapter by using the master link. (See Figure 3D.)

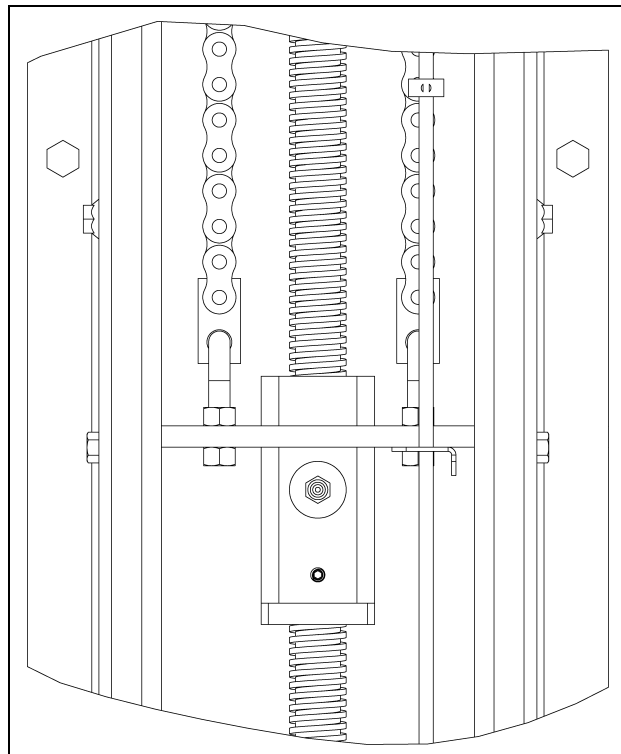


Figure 3D

9. Cut an opening in the pulley/sprocket cover 3/4" x 1/2" where the chain will exit the cover.
10. Insert the chain through the pulley/sprocket cover. (See Figure 3E.)

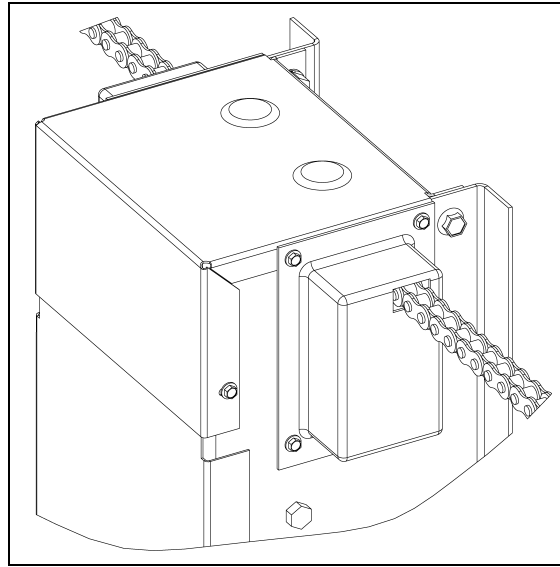


Figure 3E

11. Replace the pulley/sprocket cover to the machine.
12. Attach chain adapter to the end of the chain and the swivel to the chain adapter. (See Figure 3F.)

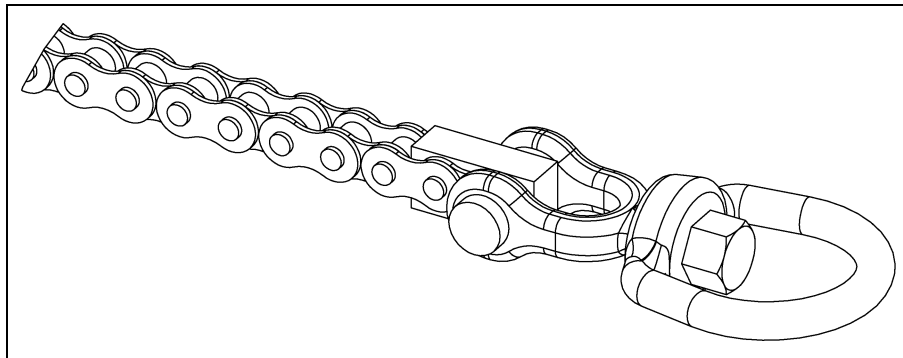
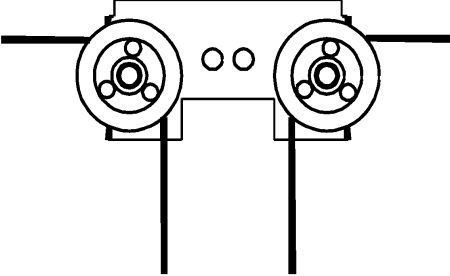
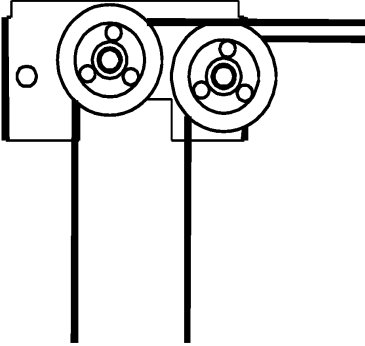
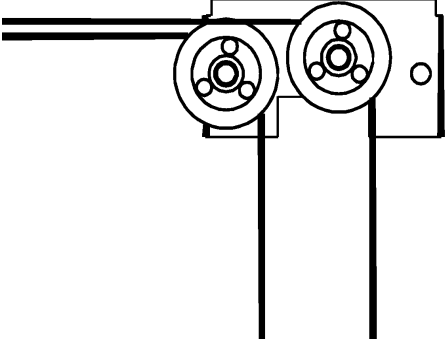
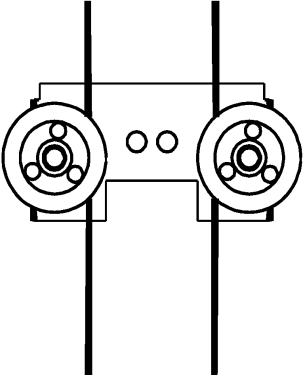


Figure 3F

13. Loop the cable through the swivel and fasten together with three (3) cable clamps.
14. Repeat [Step 7](#) through [Step 13](#) for the opposite side.
15. Install pulleys, brackets, hand winches etc., according to the appropriate mounting configuration.
16. Wire the Curtain Controller to the appropriate control. (See [Wiring Diagrams on Pages 31 and 32.](#))
17. Close the curtains/vent doors fully using the manual mode of the controls. Set the lower limit using the lower limit adjustment collar. **NOTE:** Be sure to tighten the limit switch adjustment collar. Failure to do so can cause damage to the machine and barn. Take up excess slack in the cable using the manual winch while paying close attention not to overtighten.
18. Open the curtains/vent doors to the desired opening using the manual mode of the controls. Set the upper limit switch adjustment collar. **NOTE:** Be sure to tighten the limit switch adjustment collar. Failure to do so can cause damage to the machine and barn.
19. Attach the door to the machine. This will protect the integrity of the machine and ensure the safety of those working on or near the machine.

Header Sprocket or Pulley Configurations

Sprocket/Pulley Configuration(s)	Used when
	<p>Pulling two (2) curtains with the Curtain Controller.</p>
	<p>Pulling one (1) curtain to the right of the Curtain Controller.</p>
	<p>Pulling one (1) curtain to the left of the Curtain Controller.</p>
	<p>Curtain Controller is mounted horizontally. Remove the cap plugs in the top of the machine and run cables through the top holes.</p>

Sprocket/Pulley Cover Mounting Instructions

Attaching Pulley Covers to Pre-existing Cable

NOTE: If you do not have pre-existing cable, drill a 1/4" hole in the appropriate dimple and proceed to [Step 4](#).

Step 1: Determine on which side of the machine the pulley cover will be mounted. This will affect where the slot will be cut in [Step 2](#).

Step 2: Using a saw, cut a slot from the bottom of the pulley cover lip to the dimple on the cover's face. When slotting the right pulley cover, use the right dimple for placement. When slotting the left pulley cover, use the left dimple for placement. (See [Figure 5A](#) for slot placement.)

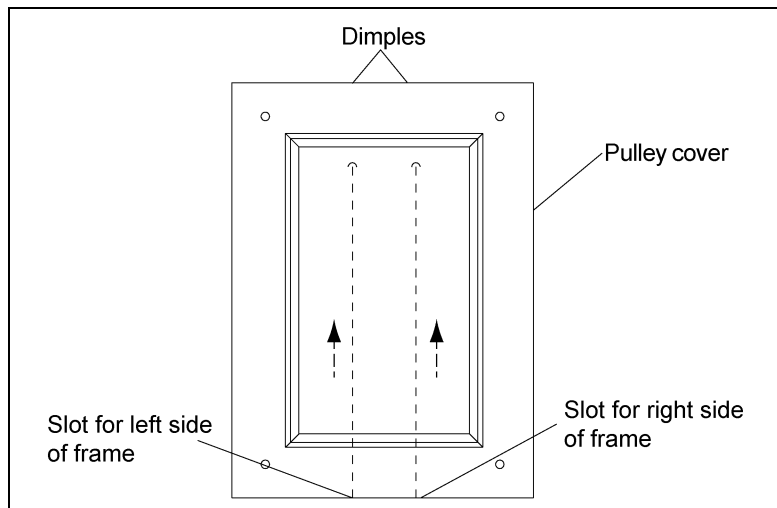


Figure 5A

Step 3: Slide the existing cable into the slot until it reaches the dimple.

Step 4: Remove existing sheet metal screw. (See [Figure 5B](#) for pulley cover fastening.)

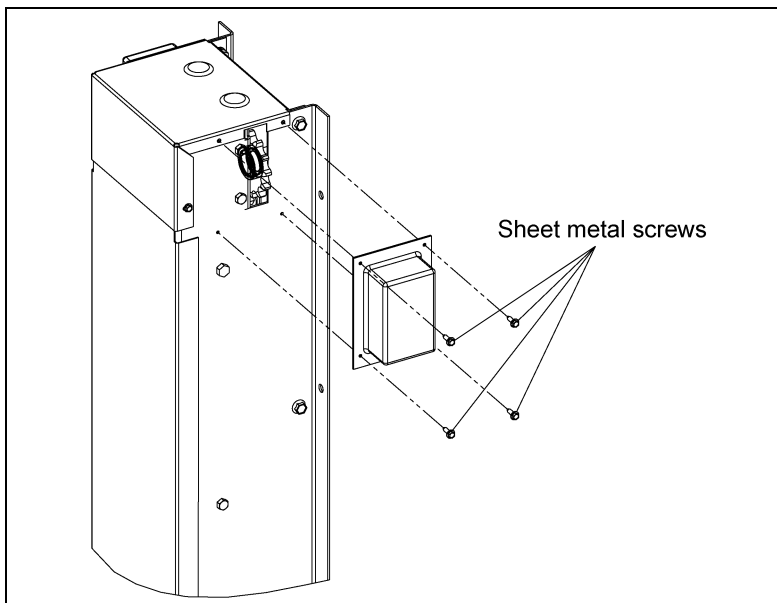


Figure 5B

Step 5: Fasten the pulley cover to the machine using four (4) #10-16 x 5/8" sheet metal screws. The top of the pulley cover should be flush with the top of the machine.

Safety in Maintenance and Repairs

Before starting any repairs or maintenance on you Curtain Controller System or control units, observe the following safety steps:

1. Isolate the system from the electricity supply by switching OFF the power isolator and lock it in the OFF position.
2. Keep the key in the possession.
3. Do not reconnect the power supply until all work is completed and all guards are correctly refitted.

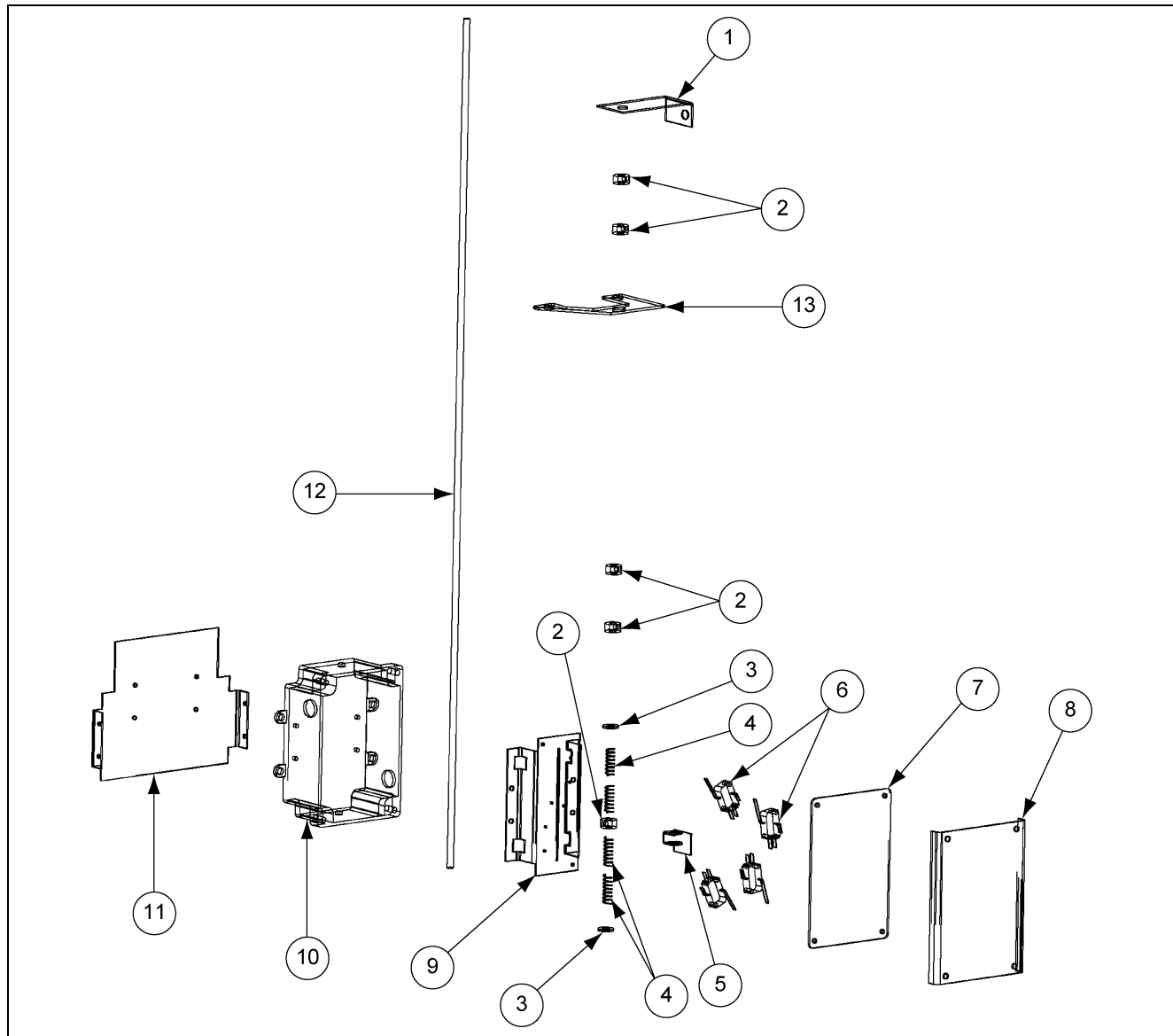
It is recommended that the end user practices a monthly inspection of the Curtain Controller and all items used in conjunction (cables, pulleys, brackets, hand winches etc.) with the machine.

1. Inspect the drive screw. Lubricate liberally with a lithium grease of an NLGI No. 2 consistency (extreme pressure properties).
2. Inspect and tighten the locking collars on the adjustment rod to ensure activation of limit switches.
3. Inspect cable, pulleys, brackets, hand winches etc., for alignment and premature wear. Realign and/or replace as needed.
4. Inspect bearings checking for smooth rotation and listening for squeaks.
5. Inspect set screws in couplers and in pillow block bearing.
6. Manually run machine in both directions to ensure positive shut off and unrestricted cable movement.
7. Inspect drive screw for debris in the threads. Debris in threads may cause premature failure of drive block.
8. Inspect the thrust bearing. Lubricate as needed.

Problem	Possible Cause	Corrective Action
1. Will not run in manual mode.	1. Control not in manual mode. 2. Toggle switch failure.	1. Move switch to manual setting. Check for loose wire connection. 2. Replace toggle switch.
1. Machine operates in opposite direction in response to temperature change.	1. Control wired incorrectly.	1. Re-wire to wiring schematic instruction.
1. Runs in both directions (automatic mode), but only one direction (manual mode). 2. Will not run in either direction (manual or automatic modes).	1. Control failure. 2. No power (circuit breaker or fuse). 3. Tripping may indicate machine overload or electrical wire short. Repair or replace before reenergizing circuit. 4. Motor failure. 5. Control failure. 6. Primary switch failure.	1. Check for loose wire connection. 2. Replace Control. 3. Check main panel circuit breaker or fuse. 4. Check control circuit breaker and/or fuse. 5. Motor designed with internal thermal protection. Before replacing, allow motor to cool down and reset. May indicate machine overload. Contact factory for machine restrictions. 6. Check to see if secondary switch is not depressed. 7. Replace primary switch.
1. Will not run in automatic but does operate in manual.	1. Control not in automatic mode. 2. Control failure	1. Move switch to automatic setting. 2. Replace control.
1. Runs in one direction only, both automatic and manual.	1. Broken or loose wire. 2. Limit switch catching on adjustment rod mechanism. 3. Limit switch failure. 4. Control failure.	1. Repair broken or loose wire. 2. Free switch and adjust as needed. 3. Replace switch. 4. Replace Control.

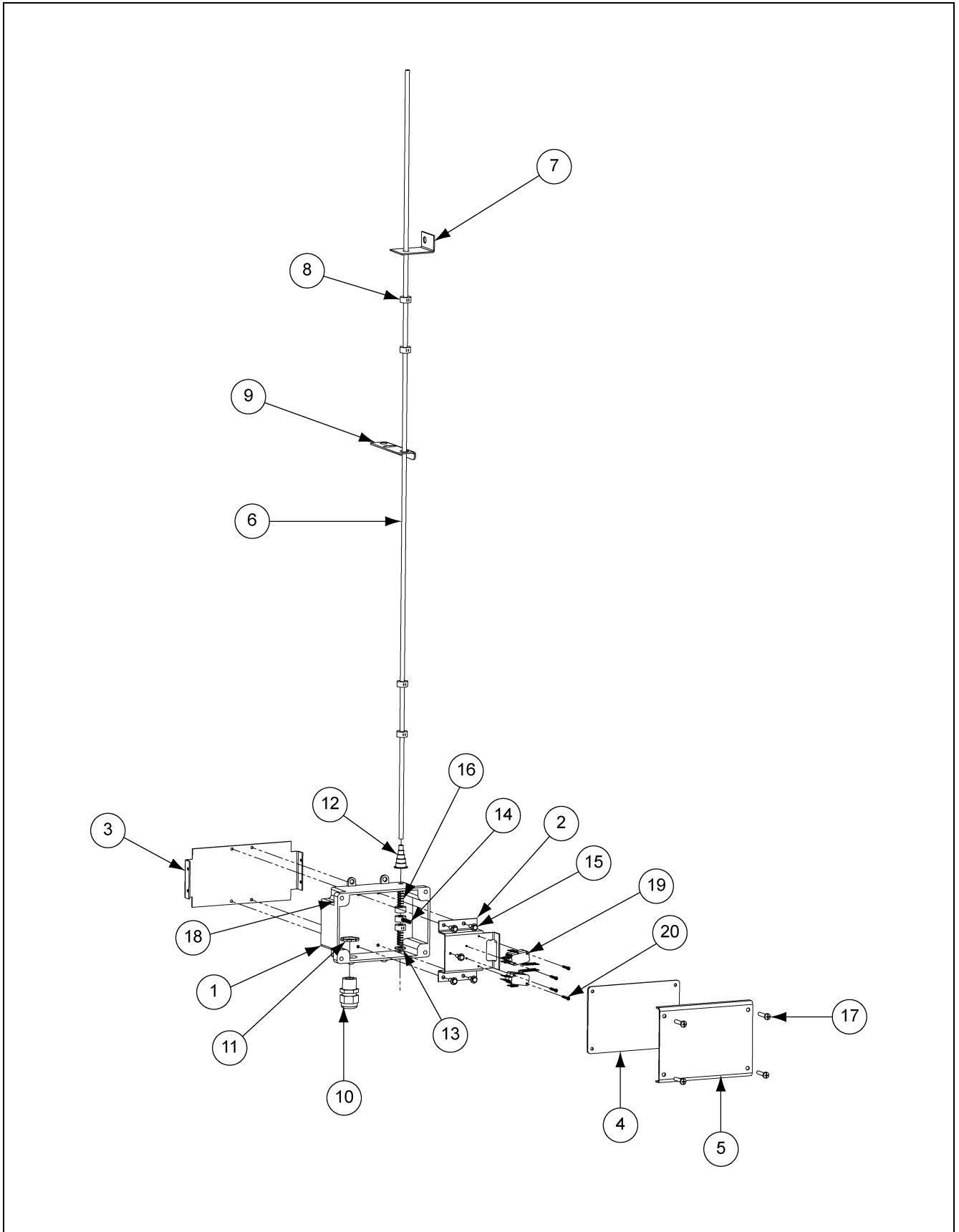
NOTES

Enclosed Limit Switch Assembly (SPRKT2430 and SPRKT2460 Only)



Ref #	Part #	Description
1	52-0337	Limit Switch Rod Retainer
2	50-0159	Adjustment Collar
3	S-2126	1/4" SAE Washer
4	52-0170	Spring
5	52-0336	Limit Switch Actuator
6	S-7974	Curtain Controller Limit Switch
7	52-0322	Gasket, Flat 4" x 6" Box
8	52-0318	Lid 4" x 6" Flat
9	52-0335	Limit Switch Mounting Plate
10	52-0340	Limit Switch Box Drilled
11	52-0338	Limit Switch Box Mounting Plate
12	50-0144	24" Travel Adjustment Rod
13	52-0339	Limit Switch Actuator
14	52-0341	24" Limit Switch Assembly Vent Mach

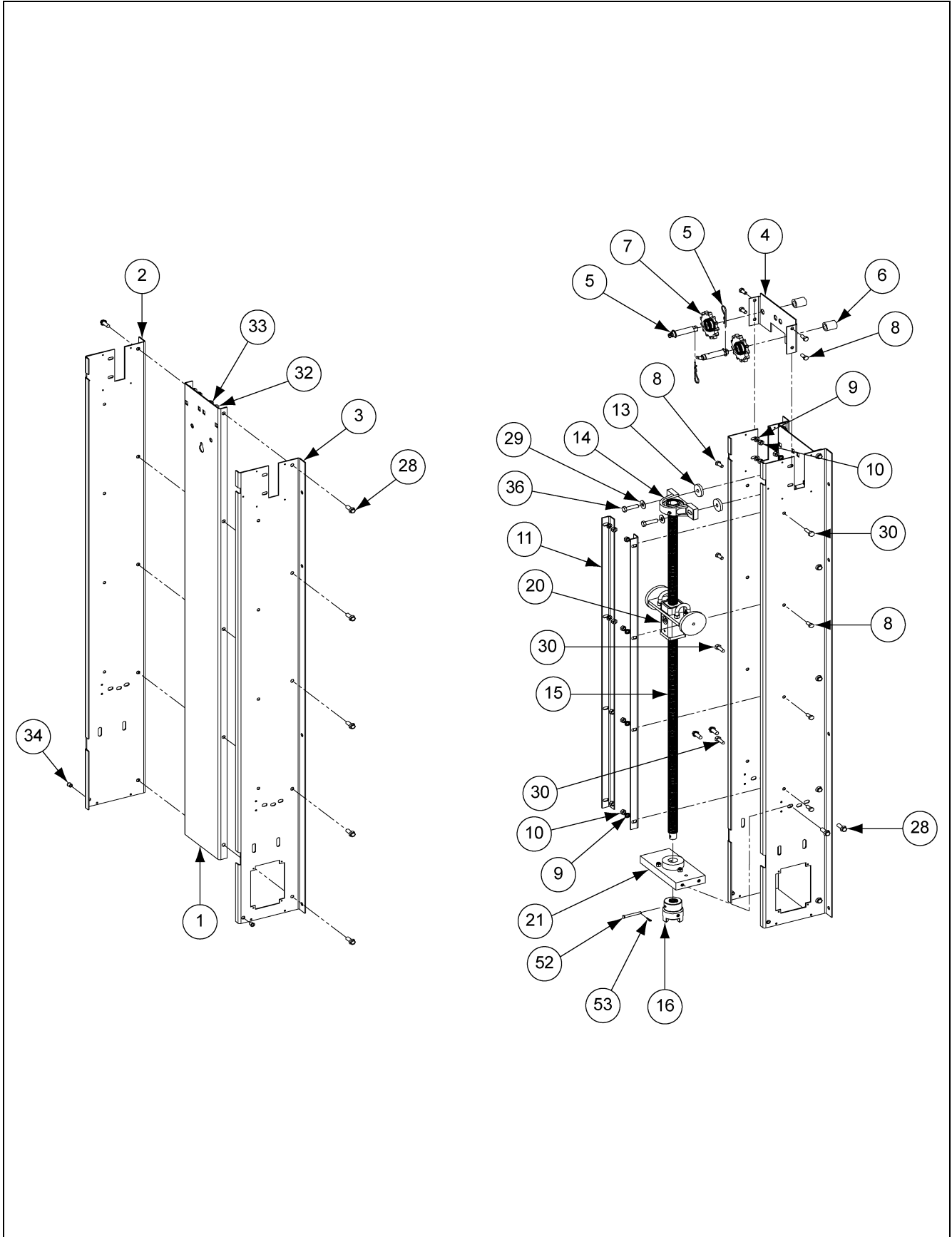
Enclosed Limit Switch Assembly (All Other Sprocket Machines)



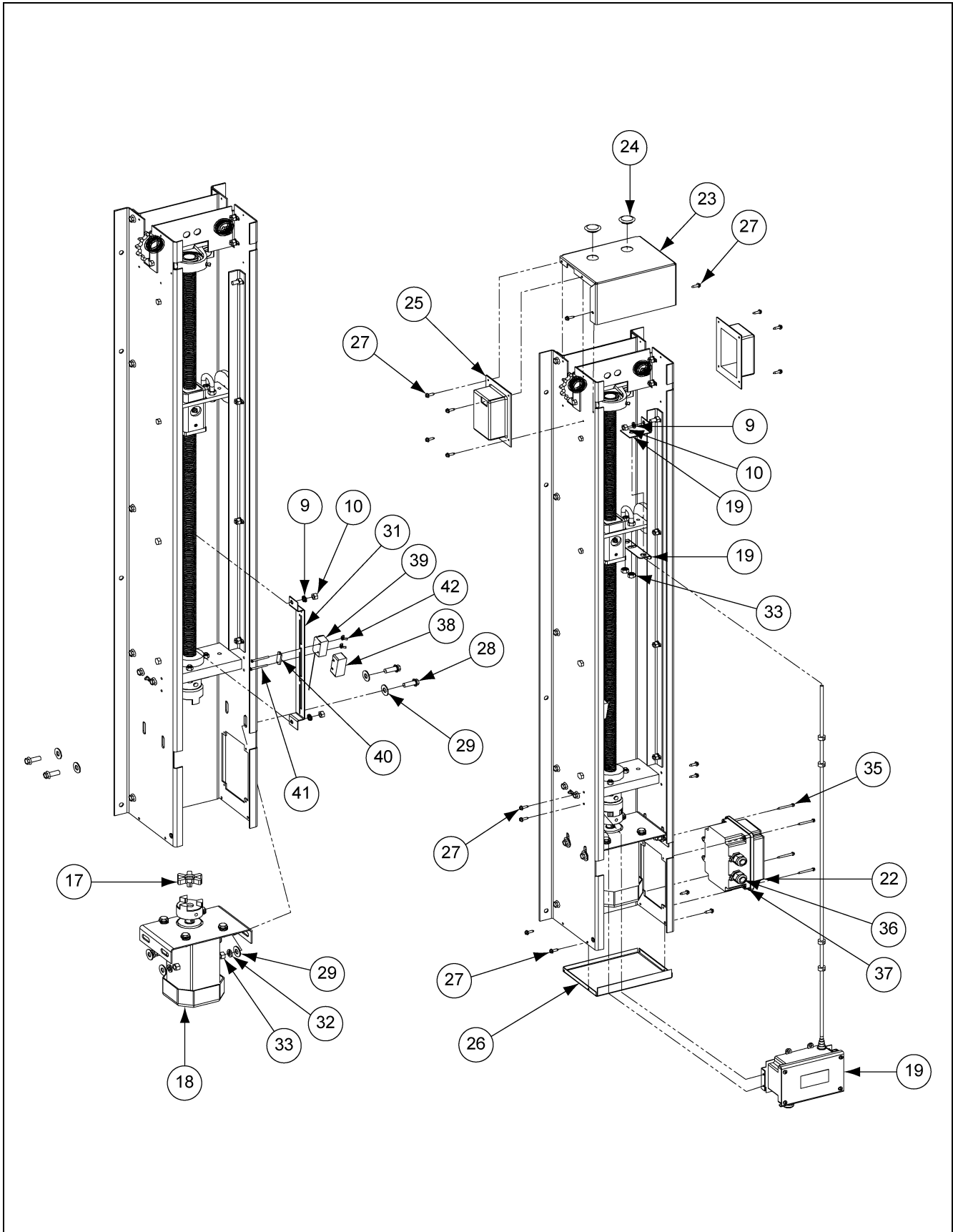
Enclosed Limit Switch Parts (All Other Sprocket Machines)

Ref #	Part #	Description
1	52-0323	Limit Switch Box
2	52-0319	Bracket, Limit Switch Support
3	52-0320	Channel, Electrical Box Mounting 4" x 6"
4	52-0322	Gasket, Flat 4" x 6" Box
5	52-0318	Lid 4" x 6" Flat
6	50-0144	24" Travel Adjustment Rod
6	50-0145	36" Travel Adjustment Rod
6	50-0146	48" Travel Adjustment Rod
6	50-0147	60" Travel Adjustment Rod
7	52-0321	Adjustment Rod Retainer 4" x 6"
8	50-0159	Adjustment Collar
9	52-0171	Angle, Limit Actuator
10	FH-1310	Cord Connector
11	FH-1309	Lock Nut 1/2" #401 ARL.
12	52-0331	Water Shield
13	S-2126	1/4" SAE Washer
14	S-7967	Set Screw #10-32 x 1-1/4"
15	S-280	Screw, SDS #10-16 x 5/8" HWH ZN
16	52-0170	Spring, Adjustment Rod Extension
17	S-7377	Screw, MS #10-24 x 1" RHP ZN Grade 2
18	S-849	Hex Nut #10-24 ZN Grade 2
19	S-7974	Straight Actuator Micro Switch
20	S-8810	Screw, SMSAB #4 x 1" PHP ZN

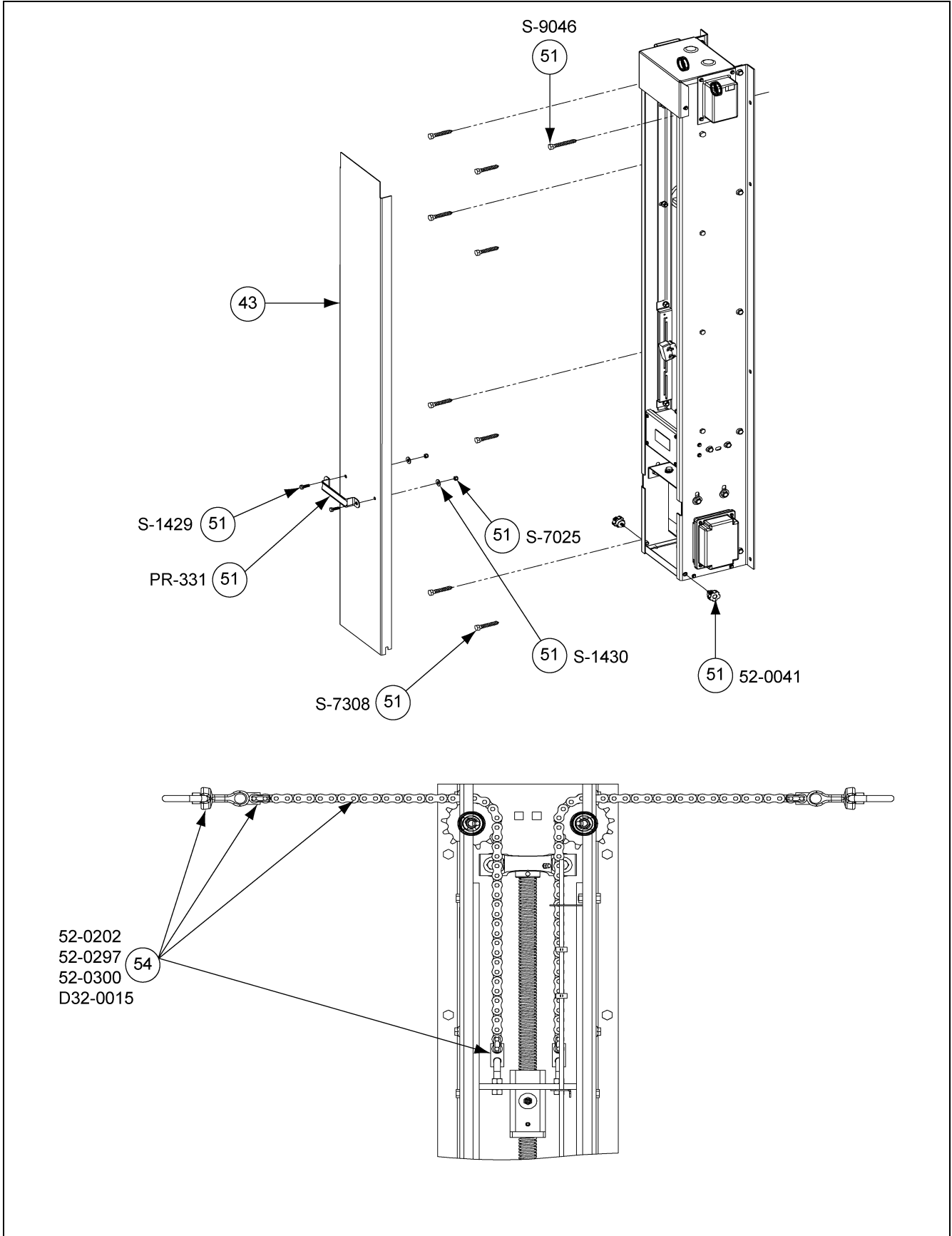
Curtain Machine Components



Curtain Machine Components (Continued)



Curtain Machine Components (Continued)



Curtain Machine Components Parts List

Ref #	Part #	Description	Qty
1	52-0004	Base Plate 3'	1
2	52-0001	Frame Side Left 3'	1
3	52-0002	Frame Side Right 3'	1
4	52-0006	Pulley Support Plate	1
5	52-0188M	Sprocket/Pulley Shoulder Bolt	2
6	52-0010	Pulley Spacer	2
7	52-0298	Bearing, #50 Sprocket w/ Needle	2
8	S-8072	Bolt HHCS 5/16"-18 x 3/4" ZN	9
9	S-1147	Split Lock Washer 5/16" ZN	12
10	S-396	Nut 5/16"-18	15
11	52-0007	Angle (Drive Block) 3	2
12	50-0043	Insert, Threaded 3/8"-16	2
13	S-8739	Flat Washer 3/8" x 1-1/2" x 1/4" TH	2
14	52-0348	Bearing, 1" Pillow Block w/ Set Screws	1
15	50-0056	Drive Screw, 36" Travel	1
16	52-0330	Coupler, Drive One Piece Machined	1
17	52-0012	Coupler, Spider Hytrel 7/8" F/LO95 Love Joy	1
18	52-0051	Motor Assembly 30 RPM CC	1
19	52-0172	Limit Switch Assembly 3'	1
20	52-0276	Drive Block Assembly w/ Nylon Insert	1
21	AC52-0174	Bearing Kit w/ Bearing Cover Nut	1
22	52-0195	4" x 6" Electrical Box Assembly CC MAC	1
23	52-0021	Top Cover	1
24	52-0044	Caplug, BPF-1	2
25	53-0007	Pulley Cover	2
26	52-0022	End Cap	1
27	S-280	Screw SDS #10-16 x 5/8" HWH ZN	22
28	S-7927	Bolt Flange 3/8"-16 x 1" ZN Grade 8	18
29	S-248	Flat Washer 3/8" 7/16" I.D. x 1" O.D. YDP	10
30	S-1146	Bolt HHCS 5/16"-18 x 1" ZN Grade 2	3
31	52-0036	Latch Out Switch Bracket	1
32	S-1054	Lock Washer, 3/8"	14
33	S-456	Hex Nut 3/8"-16 YDP Grade 5	14
34	S-8979	Insert, Threaded 1/4"-20 Steel/Zinc-Yellow Dichromate	2
35	S-2086	Bolt HHCS 3/8"-16 x 1-1/2" ZN Grade 8	2
36	FH-1310	Cord Connector, Heyco	2
37	FH-1309	Lock Nut 1/2" #401 ARL.	2
38	1573	Regular Limit Switch	1
39	1568	Whisker Switch/Limit Switch	1
40	S-7148	Weld Nut 6-32 TAP 1" Centers	1
41	S-8780	Screw, MS #6-32 x 2-1/2"	2
42	S-8940	Wing Nut #6-32 ZN Grade 2	2
43	52-0025	Front Cover 3' AVS Curtain Control	1
44	DC-889	Decal, Danger High Voltage	1
45	DC-1516	Decal: Caution Automatic Equipment	1
46	DC-1517	Decal: Danger, Sprocket/Chain	2
47	DC-818	Decal, New CC Front Panel	1
48	DC-1345	Decal: Danger, Sprocket/Chain	1
49	DC-1538	Decal, CC-Grease Zerk Locations	1
50	DC-789	Decal, Orange Adjustment Line	2
51	52-0211	CC Hardware Package	1
52	S-9319	Clevis Pin 1/4" x 2"	1
53	S-6626	Cotter Pin 3/32" x 1/2" ZN Grade 2	1
54	52-0301M	CC #50 Sprocket Hardware Kit 36" Machine	1

AC180-A Installation Kit (Purchased Separately)

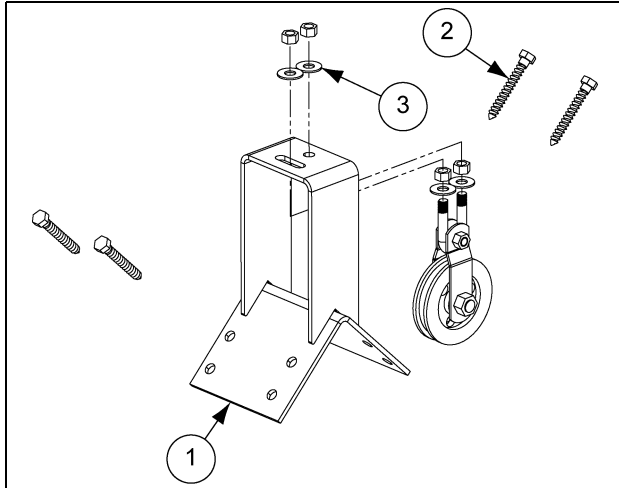


Figure 9A AC1820 Assembly

AC1820 Bracket - Outside Corner Assembly			
Ref #	Part #	Description	Qty
1	BAC1820	Corner Bracket Assembly	1
2	S-9046	Screw, Lag 3/8" x 3" HH ZN Grade 2	4
3	S-248	Flat Washer 3/8" 7/16" I.D. x 1" O.D. YDP	4
4	S-6554	Tie, Wire 8" Plastic	1

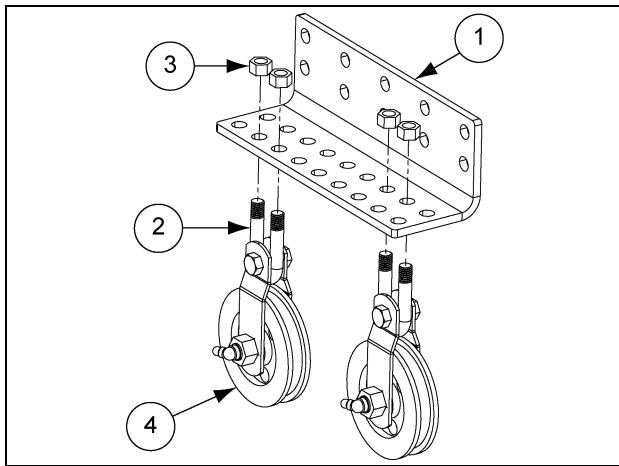


Figure 9B AC1821 Assembly

AC1821 Bracket - 3" x 3" x 9" 2 Pulley Assembly			
Ref #	Part #	Description	Qty
1	1821	Bracket - 3" x 3" x 9" for 2 Pulleys	1
2	S-9206	Bolt, U-Bolt 3/8"-16 x 2" Long x 1"	2
3	S-456	Hex Nut 3/8"-16 YDP Grade 5	4
4	1902AA	Pulley, 3-1/2" O.D. Cast Iron WI	2

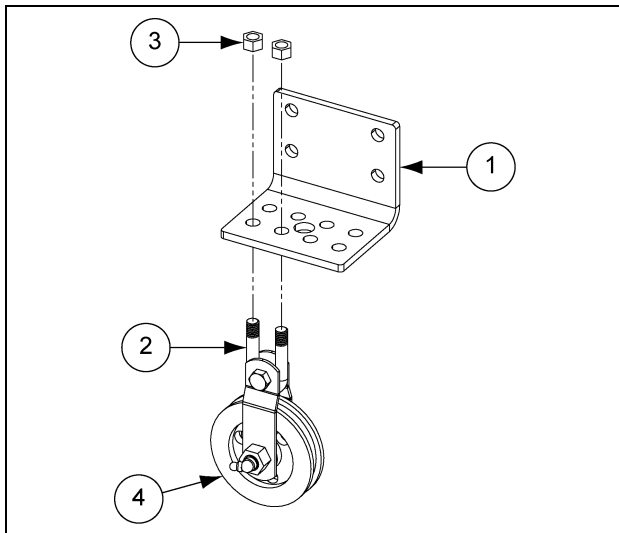
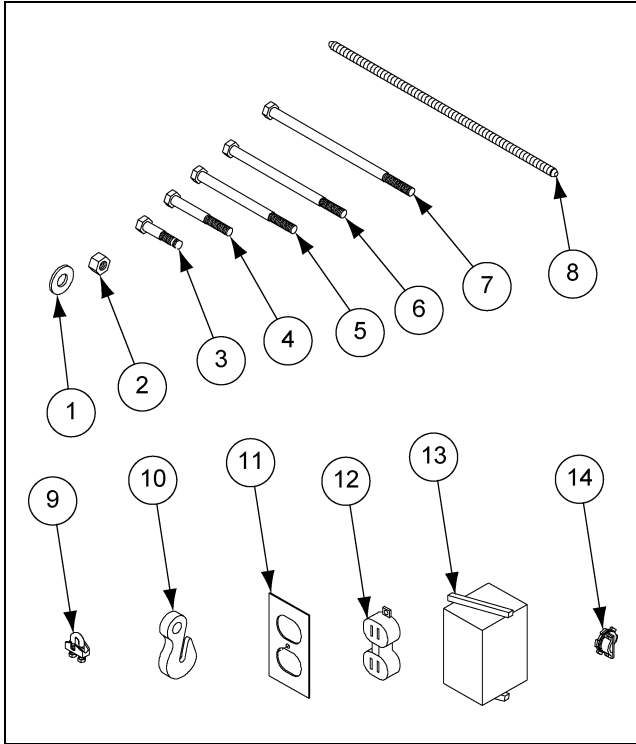


Figure 9C AC1822 Assembly

AC1822 Bracket - 3" x 3" x 3" 1 Pulley Assembly			
Ref #	Part #	Description	Qty
1	1822	Bracket - 3" x 3" x 3" for 1 Pulley	1
2	S-9206	Bolt, U-Bolt 3/8"-16 x 2" Long x 1"	1
3	S-456	Hex Nut 3/8"-16 YDP Grade 5	2
4	1902AA	Pulley, 3-1/2" O.D. Cast Iron WI	1

AC180-A Installation Kit (Purchased Separately) (Continued)

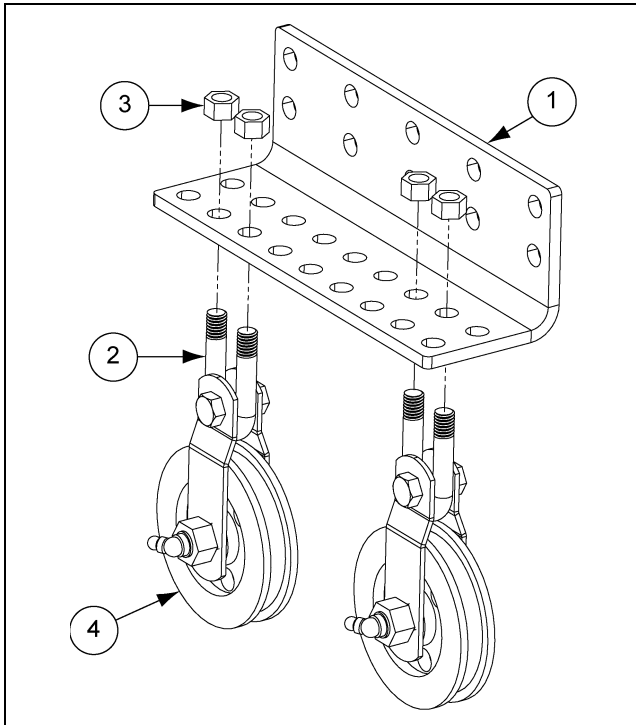


Ref #	Part #	Description	Qty
1	S-248	Flat Washer 3/8" 7/16" I.D. x 1" O.D. YDP	50
2	S-456	Hex Nut 3/8"-16 YDP Grade 5	20
3	S-7522	Bolt HHCS 3/8"-16 x 2" ZN Grade 2	5
4	S-7249	Bolt HHCS 3/8"-16 x 3" ZN Grade 5	6
5	S-7373	Bolt HHCS 3/8"-16 x 5" ZN Grade 2	2
6	S-7248	Bolt HHCS 3/8"-16 x 6" ZN Grade 2	2
7	S-8395	Bolt HHCS 3/8"-16 x 7" ZN Grade 2	4
8	8195	Rod Threaded 3/8"-16 x 12" Grade 2	4
9	S-8762	3/16" Cable Clamp, ZN Plated	11
10	1926	Hook Grab 1/4" Chain	2
11	1780	Handy Box Cover-Galvanized	1
12	1781	Duplex Receptacle-115V w/ Ground	1
13	1785	Handy Box-Surface Mount Nail On	1
14	1782	Connector, 3/8" Romex, 1/2" Thread	1

Figure 9D

NOTE: Assembly parts can be purchased separately.

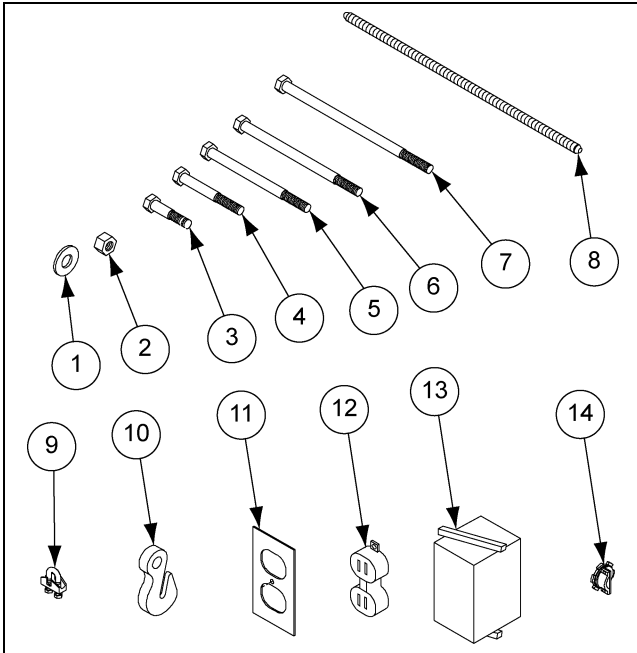
AC180-B Installation Kit (Purchased Separately)



AC1821 Bracket - 3" x 3" x 9" 2 Pulley Assembly			
Ref #	Part #	Description	Qty
1	1821	Bracket - 3" x 3" x 9" for 2 Pulleys	1
2	S-9206	Bolt, U-Bolt 3/8"-16 x 2" Long x 1"	2
3	S-456	Hex Nut 3/8"-16 YDP Grade 5	4
4	1902AA	Pulley, 3-1/2" O.D. Cast Iron WI	2

Figure 9E AC1821 Assembly

AC180-B Installation Kit (Purchased Separately) (Continued)



Ref #	Part #	Description	Qty
1	S-248	Flat Washer 3/8" 7/16" I.D. x 1" O.D. YDP	50
2	S-456	Hex Nut 3/8"-16 YDP Grade 5	21
3	S-7522	Bolt HHCS 3/8"-16 x 2" ZN Grade 2	3
4	S-7249	Bolt HHCS 3/8"-16 x 3" ZN Grade 5	3
5	S-7373	Bolt HHCS 3/8"-16 x 5" ZN Grade 2	2
6	S-7248	Bolt HHCS 3/8"-16 x 6" ZN Grade 2	2
7	S-8395	Bolt HHCS 3/8"-16 x 7" ZN Grade 2	2
8	8195	Rod Threaded 3/8"-16 x 12" Grade 2	4
9	S-8762	3/16" Cable Clamp, ZN Plated	8
10	1926	Hook Grab 1/4" Chain	2
11	1780	Handy Box Cover-Galvanized	1
12	1781	Duplex Receptacle-115V w/ Ground	1
13	1785	Handy Box-Surface Mount Nail On	1
14	1782	Connector, 3/8" Romex, 1/2" Thread	1

Figure 9F

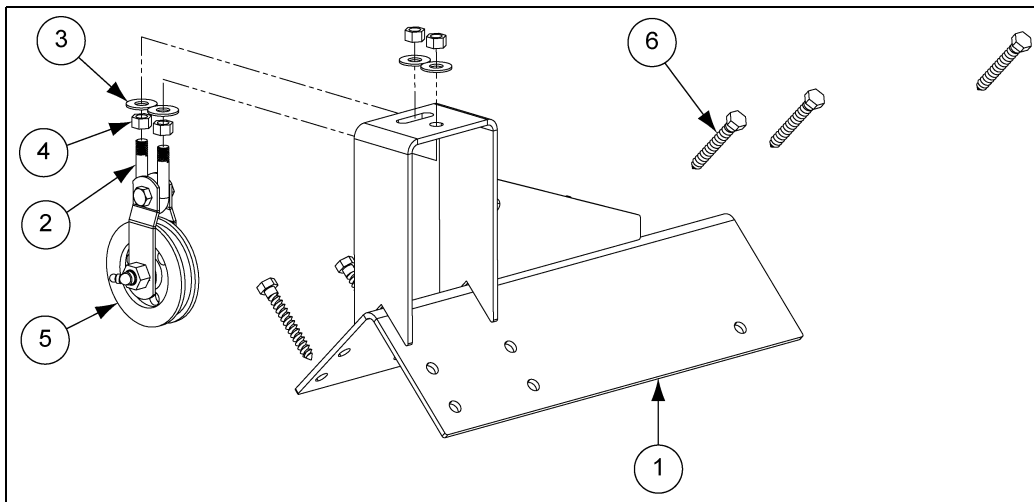


Figure 9G AC1820C Assembly

AC1820C Heavy Duty Outside Corner Bracket			
Ref #	Part #	Description	Qty
1	1820C1	Bracket - Outside Corner	1
2	S-9206	Bolt, U-Bolt 3/8"-16 x 2" Long x 1"	1
3	S-248	Flat Washer 3/8" 7/16" I.D. x 1" O.D. YDP	4
4	S-456	Hex Nut 3/8"-16 YDP Grade 5	4
5	1902AA	Pulley, 3-1/2" O.D. Cast Iron WI	1
6	S-9046	Screw, Lag 3/8" x 3" HH ZN Grade 2	6

NOTE: Assembly parts can be purchased separately.

Outside Endwall Mount for Curtains

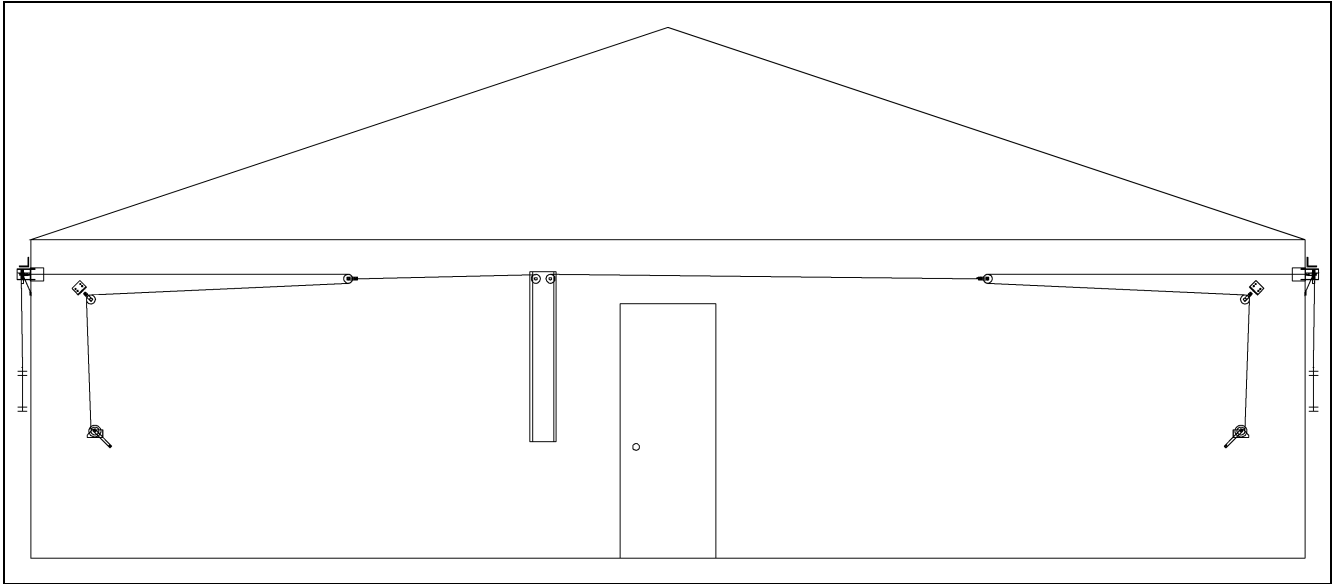


Figure 10A

The [Figure 10A](#) shows 1:2 chain/cable configuration. This means: 1 foot (1') of chain movement at the machine equals 2 feet (2') of cable movement at the curtain.

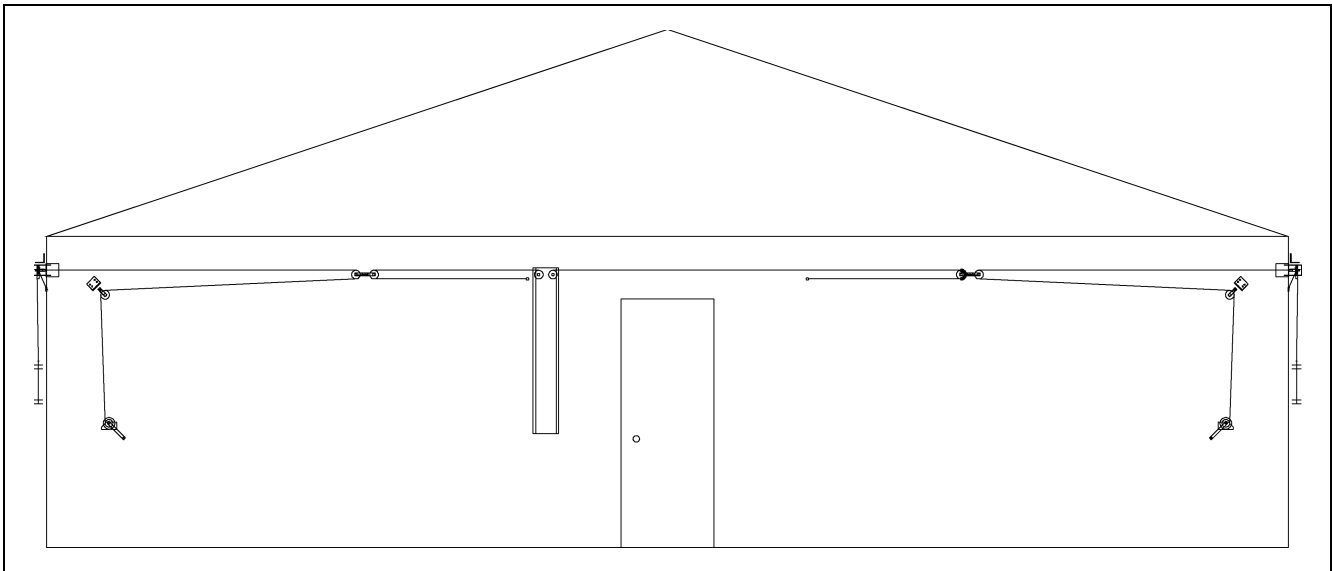


Figure 10B

The [Figure 10B](#) shows 1:1 chain/cable configuration. This means: 1 foot (1') of chain movement at the machine equals 1 foot (1') of cable movement at the curtain.

Outside Endwall Mount for Curtains (Continued)

Illustration shows table configuration of the sidewall.

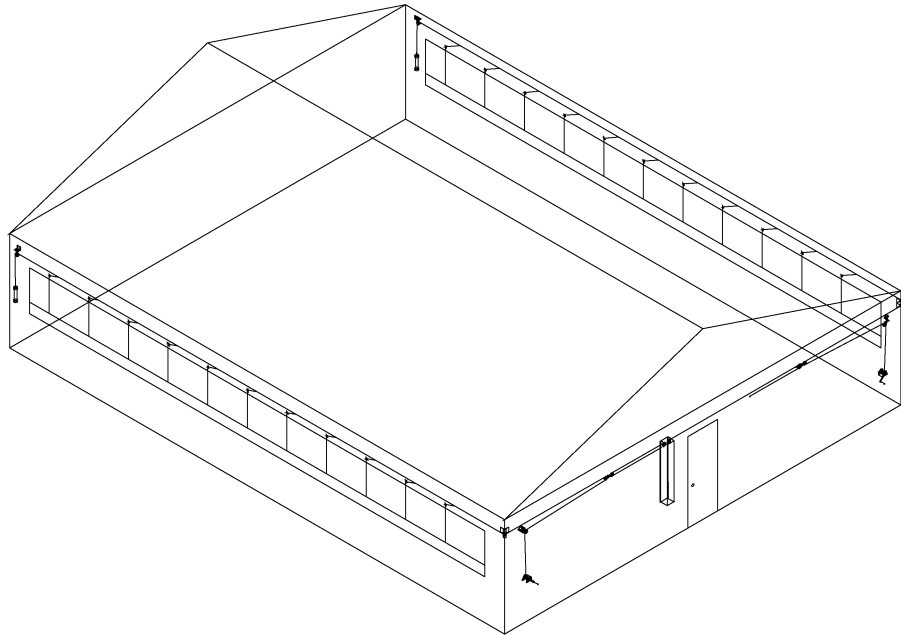


Figure 10C

The [Figure 10C](#) shows 1:1 chain/cable configuration. This means: 1 foot (1') of chain movement at the machine equals 1 foot (1') of cable movement at the curtain.

Outside Sidewall Mount for Curtains (Vertical Installation)

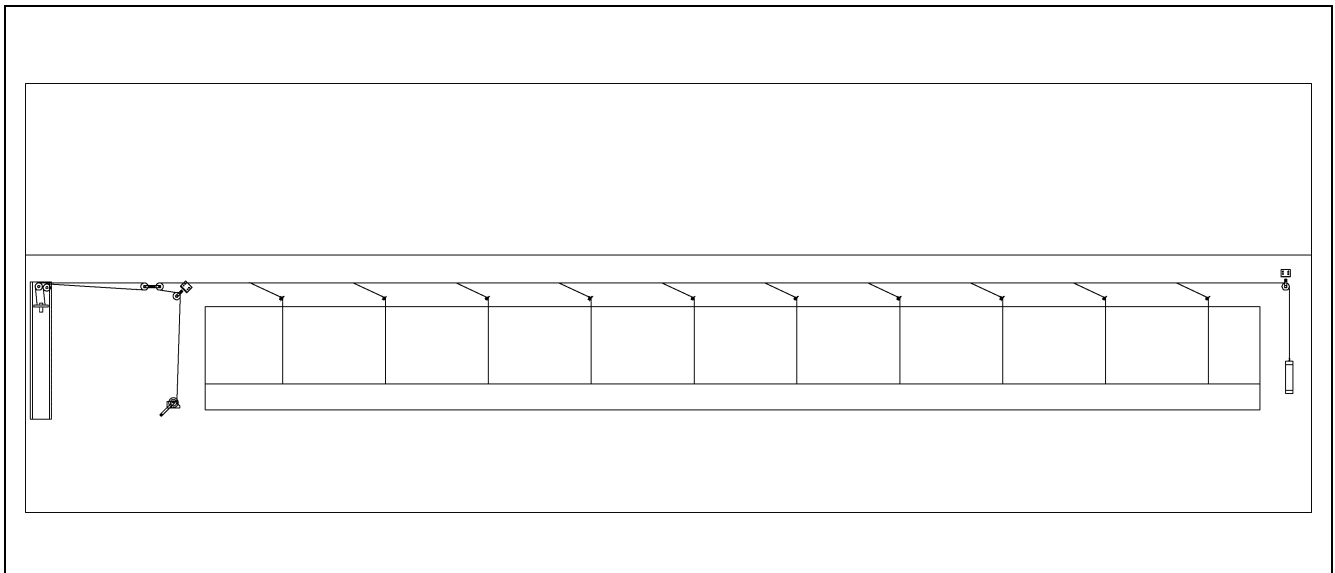


Figure 10D

The [Figure 10D](#) shows 1:2 chain/cable configuration. This means: 1 foot (1') of chain movement at the machine equals 2 feet (2') of cable movement at the curtain.

Inside Endwall Mount for Curtains

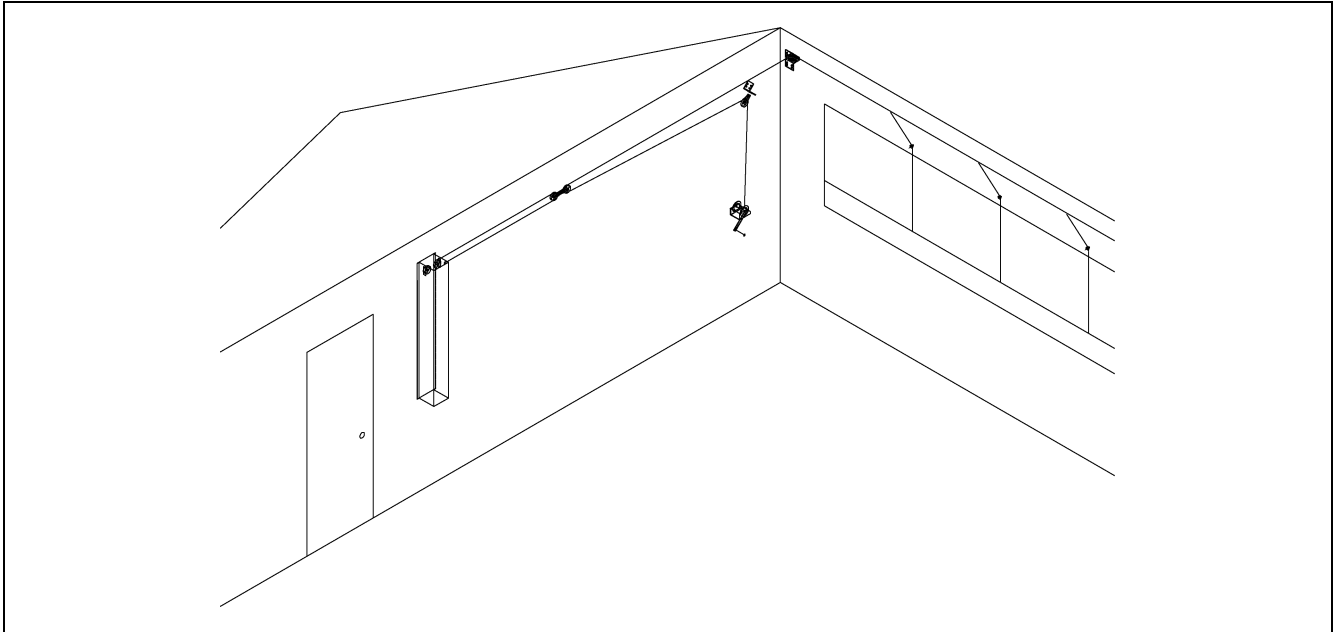


Figure 10E

The [Figure 10E](#) shows 1:1 chain/cable configuration. This means: 1 foot (1') of chain movement at the machine equals 1 foot (1') of cable movement at the curtain.

Inside Sidewall Mount for Vent Doors (Vertical Installation)

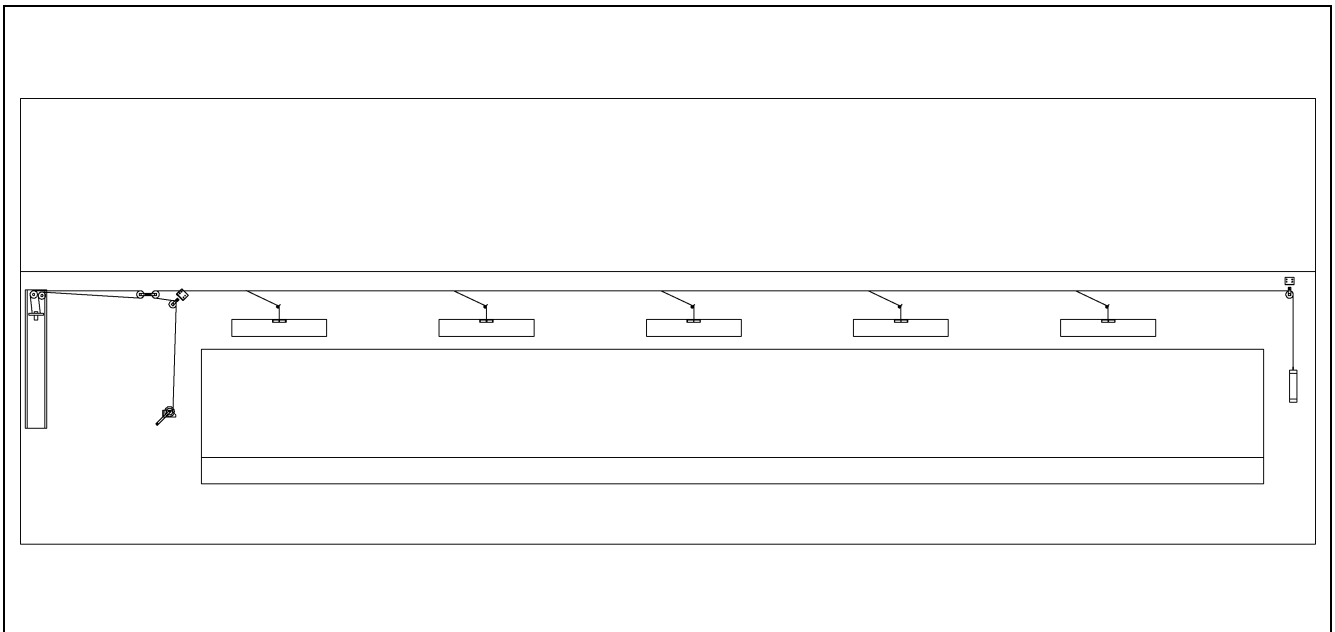


Figure 10F

The [Figure 10F](#) shows 1:1 chain/cable configuration. This means: 1 foot (1') of chain movement at the machine equals 1 foot (1') of cable movement at the doors.

Inside Endwall Mount for Vent Doors (Vertical Installation)

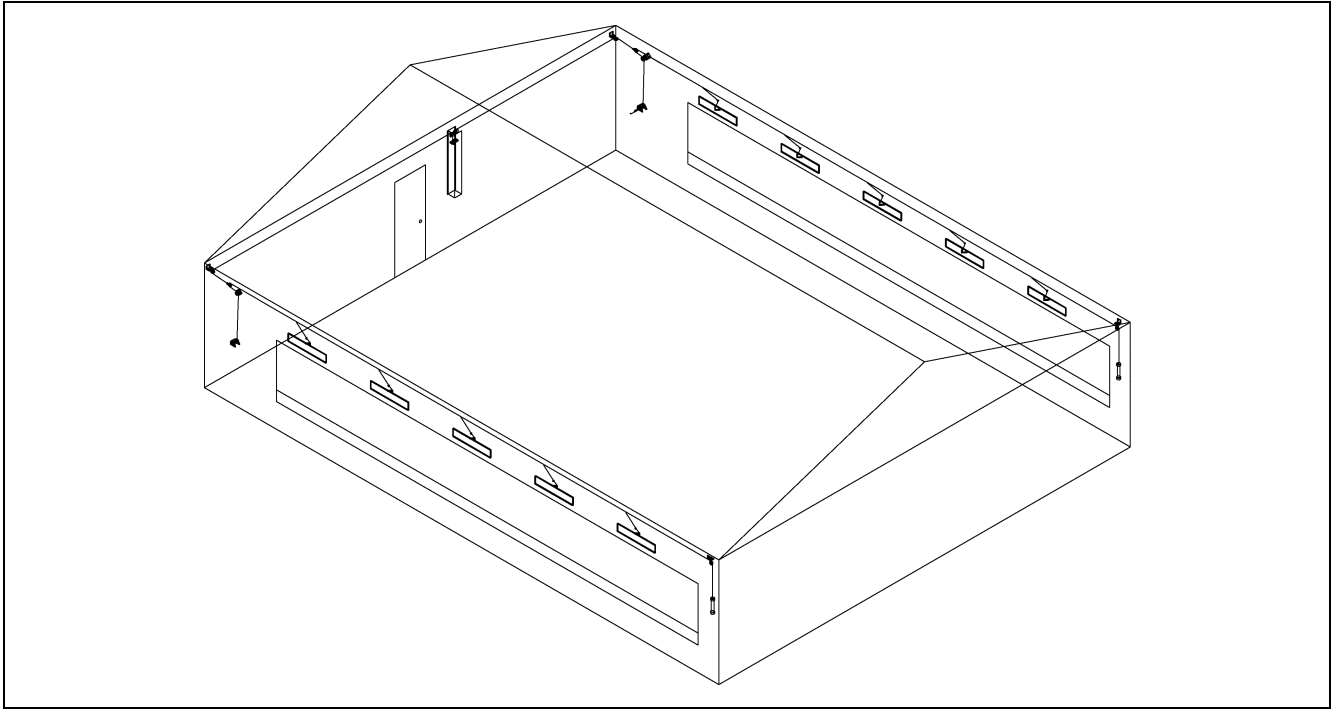


Figure 10G

The [Figure 10G](#) shows 1:2 chain/cable configuration. This means: 1 foot (1') of chain movement at the machine equals 2 feet (2') of cable movement at the doors.

Inside Sidewall Mount for Vent Doors (Horizontal Installation)

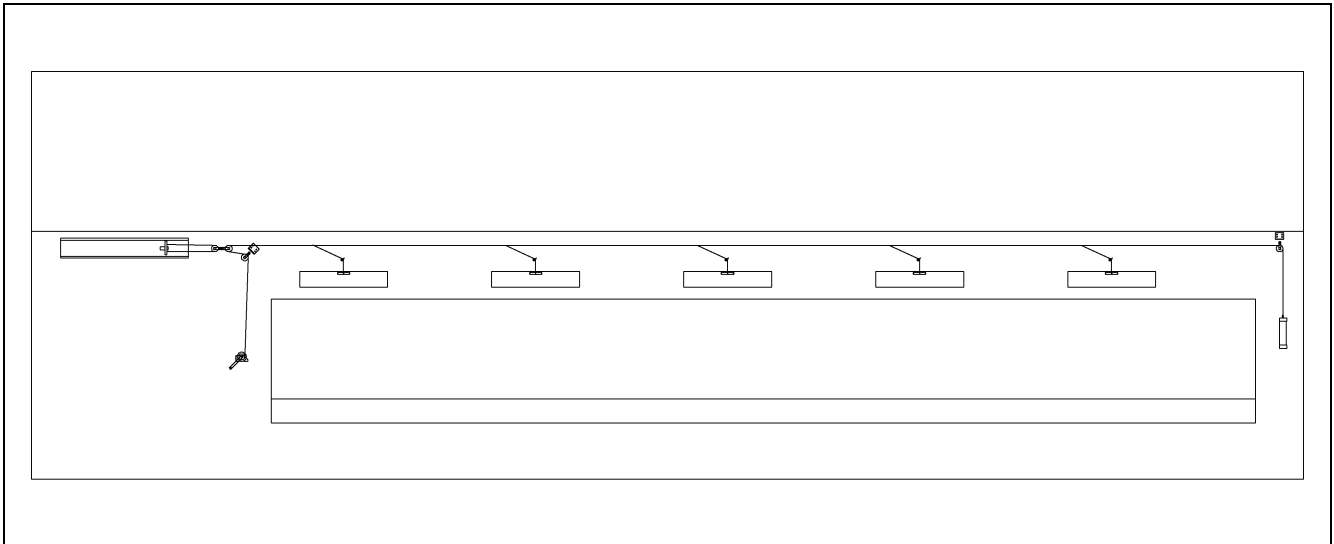
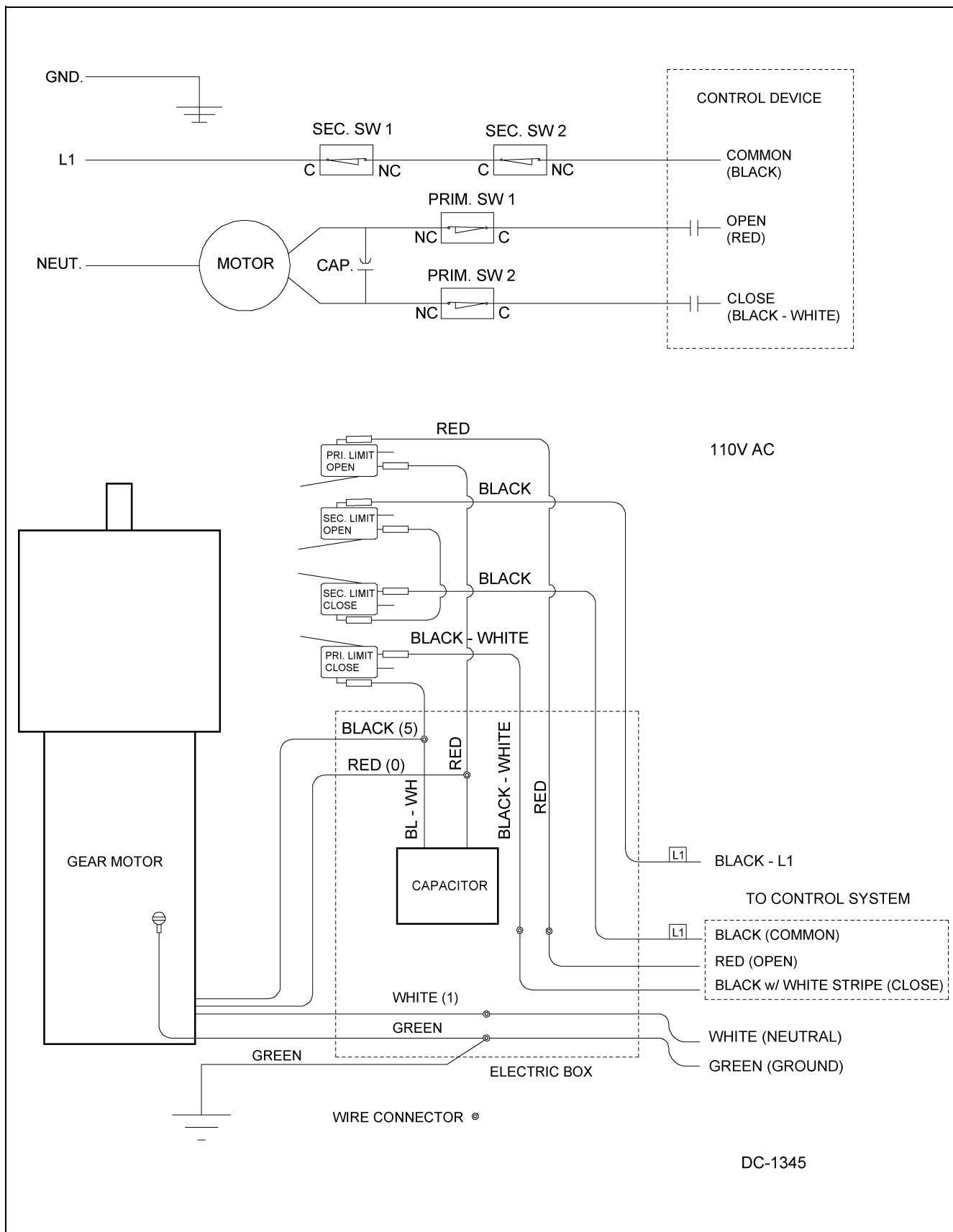


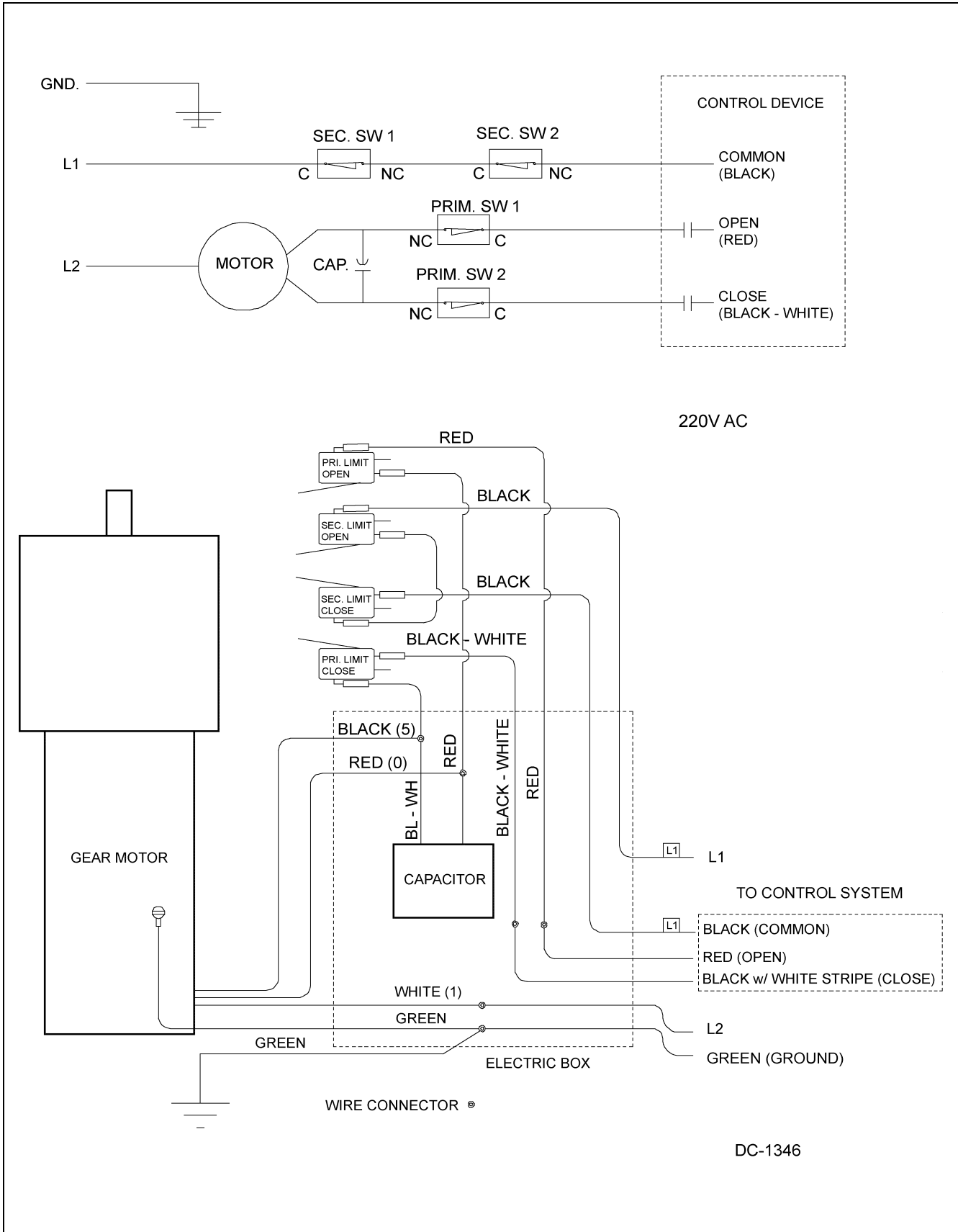
Figure 10H

The [Figure 10H](#) shows 1:1 chain/cable configuration. This means: 1 foot (1') of chain movement at the machine equals 1 foot (1') of cable movement at the doors.

Wiring Diagram for 110V 60 Hz



Wiring Diagram for 220V 50/60 Hz





Limited Warranty

The GSI Group, LLC. ("GSI") warrants products which it manufactures to be free of defects in materials and workmanship under normal usage and conditions for a period of 12 months after sale to the original end-user or if a foreign sale, 14 months from arrival at port of discharge, whichever is earlier. The end-user's sole remedy (and GSI's only obligation) is to repair or replace, at GSI's option and expense, products that in GSI's judgment, contain a material defect in materials or workmanship. Expenses incurred by or on behalf of the end-user without prior written authorization from the GSI Warranty Group shall be the sole responsibility of the end-user.

Warranty Extensions: The Limited Warranty period is extended for the following products:

	Product	Warranty Period
AP Fans and Flooring	Performer Series Direct Drive Fan Motor	3 Years
	All Fiberglass Housings	Lifetime
	All Fiberglass Propellers	Lifetime
Cumberland Feeding/Watering Systems	Feeder System Pan Assemblies	5 Years **
	Feed Tubes (1.75" & 2.00")	10 Years *
	Centerless Augers	10 Years *
	Watering Nipples	10 Years *
Grain Systems	Grain Bin Structural Design	5 Years
Grain Systems Farm Fans Zimmerman	Portable & Tower Dryers	2 Years
	Portable & Tower Dryer Frames and Internal Infrastructure †	5 Years

* Warranty prorated from list price:
 0 to 3 years – no cost to end-user
 3 to 5 years – end-user pays 25%
 5 to 7 years – end-user pays 50%
 7 to 10 years – end user pays 75%

** Warranty prorated from list price:
 0 to 3 years – no cost to end-user
 3 to 5 years – end-user pays 50%

† Motors, burner components and moving parts not included. Portable Dryer screens included. Tower Dryer screens not included.

GSI further warrants that the portable and tower dryer frame and basket, excluding all auger and auger drive components, shall be free from defects in materials for a period of time beginning on the twelfth (12th) month from the date of purchase and continuing until the sixtieth (60th) month from the date of purchase (extended warranty period). During the extended warranty period, GSI will replace the frame or basket components that prove to be defective under normal conditions of use without charge, excluding the labor, transportation, and/or shipping costs incurred in the performance of this extended warranty.

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GSI assumes no responsibility for claims resulting from construction defects or unauthorized modifications to products which it manufactured. Modifications to products not specifically delineated in the manual accompanying the equipment at initial sale will void the Limited Warranty.

This Limited Warranty shall not extend to products or parts which have been damaged by negligent use, misuse, alteration, accident or which have been improperly/inadequately maintained. This Limited Warranty extends solely to products manufactured by GSI.

Prior to installation, the end-user has the responsibility to comply with federal, state and local codes which apply to the location and installation of products manufactured or sold by GSI.

This equipment shall be installed in accordance with the current installation codes and applicable regulations which should be carefully followed in all cases. Authorities having jurisdiction should be consulted before installations are made.



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